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November 30, 1999

Ms. Charlene Rainville
Regional Grassland Exchange Program Coordinator
Medicine Bow-Routt National Forests
2250 East Richards Street
Douglas, WY 82633

Dear Ms. Rainville:

This is in response to your November 23, 1999 (received November 29) request for information on locatable mineral resources in a land exchange proposal in which the Pinnt Ranch has offered certain non-Federal lands within the Buffalo Gap National Grassland in exchange for Federal lands also within the Buffalo Gap National Grassland.

In accordance with the working agreement under Public Law 86-509, we are providing you with a report on the locatable mineral resources on the lands described in "Exhibits A and B", included with your request. These lands comprise 480 acres, more or less, in Fall River County, South Dakota.

Sincerely yours,

Anna B. Wilson, Geologist
Mineral Resources Program, Central Region

Copies: W.C. Day
 E.A. duBray

LOCATABLE MINERAL REPORT FOR THE
PINNT RANCH EXCHANGE OFFER,
BUFFALO GAP NATIONAL GRASSLAND,
NEBRASKA NATIONAL FOREST,
FALL RIVER COUNTY, SOUTH DAKOTA

By
Anna B. Wilson
U.S. Geological Survey

November 30, 1999

The following report is based on information contained in USGS mineral resource and commodity files, mineral information databases (MRDS and MAS), and on reports and maps available in the USGS library. These data are occasionally augmented with unpublished documents, personal communications, and professional experiences. No field studies or on-site visits were performed in preparing this report. Emphasis is primarily on locatable mineral resources. Leasable and salable resources are covered only if they appear in the above documents. Mineral resource assessments are subjective: the opinions expressed herein are entirely those of the author.

For the legal location description of lands considered for exchange, refer to Exhibits A and B in Attachment A. Attachment B is a map showing the location of parcels.

Pinnt Ranch Property and Federal Property

Heinne Creek 1:25,000 quadrangle, Hot Springs 1:100,000 quadrangle

All of the parcels considered in this land exchange are south of Slim Butte Creek. Therefore, they are south of any Tertiary exposures, the White Clay fault, and the Chadron Arch (Harksen and others, 1970; Simpson, 1985). The area is mapped at 1:500,000 as Late Cretaceous Pierre Shale (Darton, 1902, 1951; Petsch, 1953) and is on trend with the upper part of the Pierre Shale mapped by Dunham to the east (Dunham, 1961)

Zeolite commodities have been identified in the region but they are in Ogallala Formation which has not been mapped in the vicinity of the parcels. No other mines or prospects are known in the area (USGS, 1999a,b; Nick Raymond, USGS retired, December 1, 1999, oral commun.). All of the land parcels have negligible mineral resource potential for locatable commodities.

REFERENCES CITED:

Darton, N.H., 1902, Oelrichs [quadrangle], South Dakota-Nebraska: U.S. Geological Survey Geologic Atlas of the United States, Folio 85, 7 p., scale 1:125,000.

Darton, N.H., compiler, 1951, Geologic map of South Dakota: U.S. Geological Survey, scale 1:500,000.

Dunham, R.J., 1961, Geology of uranium in the Chadron area, Nebraska and South Dakota: U.S. Geological Survey Open-File Report 61-42, 243 p., scale 1:48,000.

Harksen, J.C., Anderson, C., Ringhand, R.L., 1970, Geology of the Oelrichs quadrangle, South Dakota: South Dakota Geological Survey Geologic Quadrangle Map, scale 1:62,500.

Petsch, B.C., compiler, 1953, Geologic map of State of South Dakota: State Geological Survey, scale 1:500,000.

Simpson, W.F., 1985, Geology and paleontology of the Oligocene Harris Ranch Badlands, southwestern South Dakota, *in* Martin, J.E., ed., Fossiliferous Cenozoic deposits of western South Dakota and northwestern Nebraska, Society of Vertebrate Paleontology, 45th Annual Meeting, Guidebook: South Dakota School of Mines and Technology, Dakoterra, v. 2, pt. 2, p. 303-333.

OTHER REFERENCES CONSULTED

U.S. Geological Survey, 1999a, Mineral Resource Data System [MRDS: active computer file; data available from U.S. Geological Survey, Mineral Resources Program, Building 20, Denver Federal Center, Denver CO 80225].

U.S. Geological Survey, 1999b, Minerals Availability System [MAS: active computer file; data available from U.S. Geological Survey, Minerals Information Team (formerly U.S. Bureau of Mines), Building 20, Denver Federal Center, Denver CO 80225].

LIST OF ATTACHMENTS:

- A. Exhibits A and B (provided by U.S. Forest Service)
- B. Location of land exchange parcels (provided by U.S. Forest Service)